

## REPORT DOCUMENTATION PAGE

AFRL-SR-BL-TR-01-

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Project, Washington, DC 20503.

0114

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE	3. REPORT TYPE AND DATES COVERED Final - 1 May 2000 - 31 October 2000	
4. TITLE AND SUBTITLE 2000 Gordon Research Conference on Electrodeposition			5. FUNDING NUMBERS F49620-00-1-0295	
6. AUTHOR(S) Dr. John Stickney				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Gordon Research Conference Inc P.O. Box 984 West Kingston, RI 02892-0984			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) AFOSR/NL 801 North Randolph Street, Room 732 Arlington, VA 22203-1977			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION AVAILABILITY STATEMENT APPROVED FOR PUBLIC RELEASE: DISTRIBUTION UNLIMITED			AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFOSR) NOTICE OF TRANSMITTAL DTIC. THIS TECHNICAL REPORT HAS BEEN REVIEWED AND IS APPROVED FOR PUBLIC RELEASE LAW AFR 160-12. DISTRIBUTION IS UNLIMITED.	
13. ABSTRACT (Maximum 200 words) The Gordon Research Conference (GRC) on Electrodeposition was held at Colby-Sawyer College, New London, NH, August 13-18, 2000. The conference was well attended with 106 participants. The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both US and foreign scientists, senior researchers, young investigators, and students.  In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field. There was a conscious effort to stimulate lively discussion about the key issues in the field today. Time for formal presentations was limited in the interest of group discussions. In order that more scientists could communicate their most recent results, poster presentation time was scheduled. In addition to these formal interactions, "free time" was scheduled to allow informal discussions. Such discussions are fostering new collaborations and joint efforts in the field.				
14. SUBJECT TERMS  20010305 054			15. NUMBER OF PAGES 14	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclass	18. SECURITY CLASSIFICATION OF THIS PAGE Unclass	19. SECURITY CLASSIFICATION OF ABSTRACT Unclass	20. LIMITATION OF ABSTRACT	



GORDON RESEARCH CONFERENCES *frontiers of science*

P.O. Box 984, WEST KINGSTON, RI 02892-0984

PHONE: 401 783-4011 • FAX: 401 783-7644

E-MAIL: [grc@grcmail.grc.uri.edu](mailto:grc@grcmail.grc.uri.edu)

WORLD WIDE WEB: <http://www.grc.uri.edu>

## 2000 GORDON RESEARCH CONFERENCE

on Electrodeposition

### FINAL PROGRESS REPORT

AFOSR

F49620-00-1-0295

The Gordon Research Conference (GRC) on Electrodeposition was held at Colby-Sawyer College, New London, NH, August 13-18, 2000. The conference was well attended with 106 participants (list enclosed). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both US and foreign scientists, senior researchers, young investigators, and students.

In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field. There was a conscious effort to stimulate lively discussion about the key issues in the field today. Time for formal presentations was limited in the interest of group discussions. In order that more scientists could communicate their most recent results, poster presentation time was scheduled. In addition to these formal interactions, "free time" was scheduled to allow informal discussions. Such discussions are fostering new collaborations and joint efforts in the field (program enclosed).

I want to personally thank you for your support of this Conference. As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings. If you wish any further details, please feel free to contact me. Thank you.

Dr. John Stickney  
Conference Chair

---

**BOARD OF TRUSTEES:** Chair / VICKI CHANDLER • Vice Chair / PAUL ORTIZ DE MONTELLANO • JAMES BRISTOL • SUSAN COPPERSMITH • HARRY B. GRAY  
CAROL HANDWERKER • PETER KNOWLES • RICHARD NICHOLSON • MARK RATNER • DAGMAR RINGE • ROBERT SILBEY • PALMER TAYLOR • BARBARA K. VONDERHAAR  
**DIRECTOR /** CARLYLE B. STORM • **DIRECTOR EMERITUS /** ALEXANDER M. CRUICKSHANK

## **Gordon Research Conference on Electrodeposition**

August 13 – 18, 2000,

Colby Sawyer College, New London, New Hampshire

Chairman: **John Stickney**, University of Georgia

Vice Chairman **Dan Schwartz**, University of Washington

### **Sunday, 4:00-6:00 Chairman's Reception for All Attendees**

**Sunday, 7:30**

#### **Magnetic Materials/CMP**

Discussion Leader: **Larry Bottomley**, Georgia Institute of Technology

7:30pm **Alexander Bittner**, Max-Planck-Institut fuer Festkoerperforschung

"Electrodeposition and Self-Assembled Monolayers"

8:30pm **Gutmann, Ronald**, Rensselaer Polytechnic Institute

"Chemical-Mechanical Planarization (CMP) for Cu Damascene Patterning:

Trends, Metrics, Mechanisms and Cu-Deposition/Annealing Dependence"

**Monday, 9:00am**

#### **Cu and VLSI**

Discussion Leader: **Alan West**, Columbia University

9:00am **Panayotis Andricacos**, IBM

"Aspects of Copper Electrodeposition and Its Use in Semiconductor Fabrication"

10:00am Coffee Break

10:15am **Mihal Gross**, Bell Labs, Lucent Technologies

"Texture and Recrystallization in Electroplated Copper for Advanced Interconnects"

11:15am **Steven Mayer**, Novellus Systems

"VLSI Copper: The Electrodeposition Challenges"

4:00-6:00pm Poster Session, A

**Monday 7:30pm**

#### **MEMS**

Discussion Leader: **Dan Schwartz**, University of Washington

7:30pm **Kevin Kelly**, Louisiana State University

"Electroplated micro heat exchangers for gas turbine components and mechanical seals"

8:30pm **Sudipta Roy**, University of Newcastle, "Development of Gold

Electrodeposition Technology for Opto-Electronic Devices"

**Tuesday 9:00am**

#### **Magnetic Materials**

Discussion Leader: **Peter Searson**, Johns Hopkins University

9:00am **Walter Schwarzacher**, University of Bristol

"Pulse deposition of magnetic nanostructures"

10:00am Coffee Break

10:15am **Werner Schindler**, University of Karlsruhe

"Nanoscale electrodeposition of Co clusters"

11:15am **Tetsuya Osaka**, Waseda University

"New Creation of soft magnetic materials by electrodeposition for high magnetic recording."

4:00-6:00pm Poster Session, A

**Tuesday 7:30pm**

**Semiconductors**

Discussion Leader: **Luisa Foresti**, University of Florence

7:30pm **Jay Switzer**, University of Missouri-Rolla

"Electrodeposited single crystals"

8:30pm **Curtis Shannon**, Auburn University

"Electrochemical ALE as a Route to Low-Dimensional Materials"

**Wednesday 9:00am**

**Surface Characterization**

Discussion Leader: **Manny Soriaga**, Texas A&M University

9:00am **Klaus Wandelt**, University of Bonn

"Atomic-scale characterization of solid/electrolyte interfaces"

10:00am Coffee Break

10:15am **Werner Freyland**, University of Karlsruhe

"Electrochemical Phase formation and Phase transitions at Metal-Molten Salt Interfaces: ES-STM and Spectroscopic Studies"

11:15am **Karl Sieradzki**, Arizona State University

"Surfactant and defect-mediated electrochemical thin film growth"

4:00-6:00pm Poster Session, B

**Wednesday 7:30pm**

**Fundamentals**

Discussion Leader: **Benjamin Scharifker**, Universidad Simon Bolivar

7:30pm **Juan Feliu**, Universidad de Alicante

"Adsorption properties and reactivity of Pt single crystals"

8:30pm **Eliezer Gileadi**, Tel Aviv University

"Mechanistic studies of the early stages of metal deposition employing the EQCM"

**Thursday 9:00am**

**Nanostructures**

Discussion Leader: **Mike Sailor**, University of California, San Diego

9:00am **Jean-Claude Bradley**, Drexel University

"Bipolar Electrochemistry: Applications in Catalysis and Materials Science"

10:00am Coffee Break

10:15am **Jean Philippe Ansermet**, EPFL Lausanne

"Nanostructuring ferromagnets by template synthesis, probing the fundamentals of magnetism"

11:15am **Bernhard Gollas**, University of Southampton

"Nanostructured metal films from lyotropic liquid crystalline templates"

4:00-6:00pm Poster Session, B

**Thursday 7:30pm**

**Short Talks**

Discussion Leader: **Dan Schwartz**, University of Washington

# Conference Registration List

## ELECTRODEPOSITION

Colby-Sawyer: 8/13/00 thru 8/18/00

---

<b>JOSEPH A ABYS</b> LUCENT TECHNOLOGIES 236 RICHMOND VALLEY ROAD STATEN ISLAND, NY 10309	Phone: 718-317-4490 Fax: 718-317-4439 Email: JABYS@LUCENT.COM Participation: Attendee
<b>PANAYOTIS C ANDRICACOS</b> T.J. WATSON RESEARCH CENTER IBM CORPORATION P.O. BOX 218, 04-204 RM 36-161 YORKTOWN HEIGHTS, NY 10598-0218	Phone: 914-945-2683 Fax: 914-945-4520 Email: NDRICAC@US.IBM.COM Participation: Speaker
<b>JEAN-PHILLIP ANSERMET</b> ECOLE POLYTECHNIQUE FEDERALE LAUSANNE INSTITUT DE PHYSIQUE EXPERIMENTALE PHB-ECUBLENS LAUSANNE, VAUD CH-1015 SWITZERLAND	Phone: 41-216933339 Fax: 41-216933604 Email: ANSERMET@IPE.DP.EPFL.CH Participation: Speaker
<b>KAREN ATTENBOROUGH</b> IMEC VZW (INTERUNIVERSITY MICROELECTRONICS CENTER) MCP/ MAGNETO-ELECTRONICS KAPELDREEF 75 LEUVEN, B-3001 BELGIUM	Phone: 32-16-28-16-83 Fax: 32-16-281-501 Email: karena@imec.be Participation: Poster Presenter
<b>DALE P BARKEY</b> UNIVERSITY OF NEW HAMPSHIRE DEPARTMENT OF CHEMICAL ENGINEERING KINGSBURY HALL DURHAM, NH 03824	Phone: 603-862-1918 Fax: 603-862-3747 Email: DPB@KEPLER.UNH.EDU Participation: Attendee
<b>SHANE D BEATTIE</b> DALHOUSIE UNIVERSITY DEPARTMENT OF PHYSICS SIR JAMES DUNN BUILDING HALIFAX, NS B3H 3J5 CANADA	Phone: 902-494-2991 Fax: 902-494-5191 Email: SHANEBEATTIE@HOTMAIL.COM Participation: Attendee
<b>UGO BERTOCCI</b> NIST NIST GAITHERSBURG, MD 20899-8551	Phone: 301-975-6402 Fax: 301-926-7679 Email: BERTOCCI@NIST.GOV Participation: Attendee
<b>MASSIMILIANO BESTETTI</b> POLYTECHNIC OF MILAN VIA MANCINELLI 7 MILAN, 20131 ITALY	Phone: 39-2-2399-3102 Fax: 39-02-2399-3180 Email: BESTETTI@CHFI.POLIMI.IT Participation: Attendee
<b>JOHN P BIRTLES</b> TUFTS UNIVERSITY DEPARTMENT OF CHEMISTRY 62 TALBOT AVENUE MEDFORD, MA 02155	Phone: 617-627-5308 Fax: 617-627-3443 Email: JBIRTLES@EMERALD.TUFTS.EDU Participation: Attendee

ALEXANDER M BITTNER  
MAX-PLANCK-INSTITUT  
MPI FKF, HEISENBERGSTR. 1  
STUTT GART, D-70569 GERMANY

Phone: 49-711-689-1433  
Fax: 49-711-689-1079  
Email: BITTNER@KERN.MPI-STUTT GART.MPG.DE  
Participation: Speaker

LAWRENCE A BOTTOMLEY  
GEORGIA INSTITUTE OF TECHNOLOGY  
SCHOOL OF CHEMISTRY & BIOCHEMISTRY  
ATLANTA, GA 30332

Phone: 404-894-4014  
Fax: 404-894-7452  
Email: LAWRENCE.BOTTOMLEY@CHEMISTRY.GATECH.EDU  
Participation: Discussion Leader

JEAN-CLAUDE BRADLEY  
DREXEL UNIVERSITY  
DEPARTMENT OF CHEMISTRY  
32ND AND CHESNUT STREETS  
PHILADELPHIA, PA 19104

Phone: 215-895-2647  
Fax: 215-893-3699  
Email: BRADLEJC@POST.DREXEL.EDU  
Participation: Speaker

STANKO R BRANKOVIC  
BROOKHAVEN NATIONAL LABORATORY  
DEPARTMENT OF APPLIED SCIENCES  
BUILDING 555  
UPTON, NY 11973-500

Phone: 631-344-8444  
Fax: 631-344-5815  
Email: STANKO@BNL.GOV  
Participation: Poster Presenter

BRUCE L BURTON  
HUNTSMAN  
7114 NORTH LAMAR BOULEVARD  
AUSTIN, TX 78752

Phone: 512-483-0148  
Fax:  
Email: BRUCE\_BURTON@HUNTSMAN.COM  
Participation: Attendee

YANG CAO  
COLUMBIA UNIVERSITY  
DEPARTMENT OF CHEMICAL ENGINEERING  
NEW YORK, NY 10027

Phone: 212-854-4463  
Fax: 212-854-3054  
Email: YC174@COLUMBIA.EDU  
Participation: Poster Presenter

ARNALDO CARRASQUILLO  
UNIVERSITY OF PUERTO RICO  
DEPT OF CHEMISTRY  
P O BOX 9019  
MAYAGUEZ, PR 00691-9019

Phone: 787-832-4040 X2386  
Fax: 787-265-3849  
Email: CARRASQUILLO@UPRM.EDU  
Participation: Attendee

CHIH-HUNG (A CHANG  
OREGON STATE UNIVERSITY  
DEPARTMENT OF CHEMICAL ENGINEERING  
CORVALLIS, OR 97331

Phone: 541-737-8548  
Fax: 541-737-4600  
Email: CHANGCH@CHE.ORST.EDU  
Participation: Attendee

GREGORY A CLAYSON  
NORTH CAROLINA STATE UNIVERSITY  
201 RIDDICK HALL  
RALEIGH, NC 27606

Phone: 919-513-1137  
Fax: 919-515-3465  
Email: GACLAYSO@EOS.NCSU.EDU  
Participation: Attendee

SYLVAIN CRUCHON-DUPEYRAT  
WAYNE STATE UNIVERSITY  
DEPARTMENT OF CHEMISTRY 75  
5101 CASS AVENUE  
DETROIT, MI 48201

Phone: 313-577-0482  
Fax: 313-577-8822  
Email: SCD@CHEM.WAYNE.EDU  
Participation: Poster Presenter

**KURT H DAVIS**  
UNIVERSITY OF GEORGIA  
DEPARTMENT OF CHEMISTRY  
ATHENS, GA 30605

Phone:  
Fax:  
Email: kewl@arches.uga.edu

Participation: Attendee

**JEROME V DOLLET**  
AIR LIQUIDE  
CRCD  
BP 126  
JOUY EN JOSAS, 78353 FRANCE

Phone: 33-1-39-07-60-18  
Fax: 33-1-39-07-64-66  
Email: jerome.dollet@airliquide.com

Participation: Attendee

**LAURENT DOYEN**  
AIR LIQUIDE ELECTRONICS  
224 BVD J KENNEDY  
CORBEIL ESSONNES, 91105 FRANCE

Phone: 33-160-88-65-79  
Fax: 33-160-38-50-30  
Email: laurent.doyen@altissemiconductor.com

Participation: Attendee

**THOMAS S EAGLETON**  
THE UNIVERSITY OF BIRMINGHAM  
DEPARTMENT OF METALLURGY AND MATERIALS  
EDGBASTON  
BIRMINGHAM, B15 2TT UNITED KINGDOM

Phone: 44-121-414-6752  
Fax: 44-121-414-5232  
Email: t.s.eagleton@bham.ac.uk

Participation: Poster Presenter

**FERESHTEH EBRAHIMI**  
UNIVERSITY OF FLORIDA  
MATERIALS SCIENCE AND ENG DEPT  
PO BOX 116400  
GAINESVILLE, FL 32611

Phone: 352-846-3791  
Fax: 352-846-3355  
Email: febra@mse.ufl.edu

Participation: Poster Presenter

**GERALD E ENGELMANN**  
UNIVERSITY OF ULM  
DEPT. OF ELECTROCHEMISTRY  
ULM, 89069 GERMANY

Phone: 49-731-502542  
Fax: 49-731-502540  
Email: GERALD.ENGELMANN@CHEMIE.UNI-ULM.DE  
Participation: Poster Presenter

**JUAN MIGUEL FELIU**  
UNIVERSIDAD DE ALICANTE  
QUIMICA-FISICA  
APDO. CORREOS, 99  
ALICANTE, 03080 SPAIN

Phone: 34-965909301  
Fax: 34-965903537  
Email: JUAN.FELIU@UA.ES

Participation: Speaker

**ROBERT W FILAS**  
LUCENT TECHNOLOGIES, BELL LABORATORIES  
7E-205, 600 MOUNTAIN AVE.  
MURRAY HILL, NJ 07974

Phone: 908-582-5382  
Fax: 908-582-3958  
Email: RWF@LUCENT.COM

Participation: Attendee

**BILLY H FLOWERS**  
UNIVERSITY OF GEORGIA  
CHEMISTRY DEPARTMENT  
1001 FIELD STREET  
ATHENS, GA 30602

Phone: 706-542-9453  
Fax:  
Email: FLOWERS@SUNCHEM.CHEM.UGA.EDU

Participation: Poster Presenter

**M LUISA FORESTI**  
UNIVERSITY OF FLORENCE  
DIPARTIMENTO DI CHIMICA  
VIA G CAPPONI 9  
FIRENZE, I-50121 ITALY

Phone: 39-55-2757541  
Fax: 39-55-244102  
Email: foresti@unifi.it

Participation: Discussion Leader

JAN L FRANSAER  
KULEUVEN  
DEPT. MTM  
DE CROYLAAN 2  
HEVERLEE, BRABANT 3001 BELGIUM

Phone: 32-16321239  
Fax: 32-16321991  
Email: JAN.FRANSAER@MTM.KULEUVEN.AC.BE  
Participation: Attendee

WERNER FREYLAND  
UNIVERSITY OF KARLSRUHE  
INST PHYSICAL CHEMISTRY & ELECTROCHEM  
KARLSRUHE, D-76128 GERMANY

Phone: 0721-608-2100  
Fax: 0721-608-4856  
Email: FREY@IPC1IBM1.CHEMIE.UNI-KARLSRUHE.DE  
Participation: Speaker

YASUHIRO FUKUNAKA  
KYOTO UNIVERSITY  
DEPARTMENT OF ENERGY SCIENCE & TECHNOLOGY  
YOSHIDA HONMACHI, SAKYO  
KYOTO, 606-8501 JAPAN

Phone: 81-75-753-5415  
Fax: 81-75-753-4719  
Email: FUKUNAKA@ENERGY.KYOTO-U.AC.JP  
Participation: Poster Presenter

MOHAMED A GHANEM  
UNIVERSITY OF SOUTHAMPTON  
CHEMISTRY DEPARTMENT  
HIGHFIELD  
SOUTHAMPTON, SO17 1BJ UNITED KINGDOM

Phone: 44-023-80594107  
Fax: 44-023-80593781  
Email: MAG@SOTON.AC.UK  
Participation: Poster Presenter

ELIEZER GILEADI  
TEL AVIV UNIVERSITY  
SCHOOL OF CHEMISTRY  
RAMAT-AVIV, 69978 ISRAEL

Phone: 972-3-6407587  
Fax: 972-3-6409293  
Email: GILEADI@POST.TAU.AC.IL  
Participation: Speaker

BERNHARD GOLLAS  
UNIVERSITY OF SOUTHAMPTON  
DEPARTMENT OF CHEMISTRY  
HIGHFIELD  
SOUTHAMPTON, SO17-1BJ UNITED KINGDOM

Phone: 02380594107  
Fax:  
Email: BERNHARD.GOLLAS@SOTON.AC.UK  
Participation: Speaker

MIHAL E GROSS  
BELL LABS, LUCENT TECHNOLOGIES  
ROOM 1D-343  
600 MOUNTAIN AVENUE  
MURRAY HILL, NJ 07974

Phone: 908-582-4504  
Fax: 908-582-2300  
Email: MIHAL@LUCENT.COM  
Participation: Speaker

RONALD GUTMANN  
RENSSELEAR POLYTECHNIC INSTITUTE  
CENTER FOR INDUSTRIAL INNOVATION  
110 8TH STREET  
TROY, NY 12180

Phone: 518-276-6794  
Fax:  
Email: GUTMAR@RPI.EDU  
Participation: Speaker

CHARLIE HARDY  
3 M COMPANY  
3 M CENTER  
BUILDING 201-1W-28  
ST PAUL, MN 55144

Phone: 612-737-3044  
Fax: 612-737-3044  
Email: LCHARDY@MMM.COM  
Participation: Attendee

YASUNORI HAYASHI  
KYUSHU-UNIVERSITY, HAKOZAKI  
DEPT OF MATERIALS SCIENCE & ENGINEERING  
FACULTY OF ENGINEERING  
FUKUOKA, 812 JAPAN

Phone: 81-92-642-3679  
Fax: 81-92-632-0434  
Email: HAYASHI@ZAIKO.KYUSHU-U.AC.JP  
Participation: Poster Presenter



<b>CHARLES L' HUSSEY</b> UNIVERSITY OF MISSISSIPPI DEPARTMENT OF CHEMISTRY UNIVERSITY, MS 38677-9999	Phone: 662-915-7301 Fax: 662-915-7300 Email: CHCLH@CHEM1.OLEMISS.EDU Participation: Attendee
<b>NICK K ITCHEV</b> GILETTE/ DURACELL 37A STREET, THE GILETTE CO NEEDHAM, MA 02494	Phone: 781-455-9442 X442 Fax: Email: nick_itchev@gilette.com Participation: Attendee
<b>STACY J JONES</b> UNIVERSITY OF MISSISSIPPI DEPARTMENT OF CHEMISTRY COULTER HALL, ROOM 359 UNIVERSITY, MS 38677	Phone: 662-915-7605 Fax: 662-915-7300 Email: CHJONES@OLEMISS.EDU Participation: Poster Presenter
<b>JAMES KELLY</b> EPFL DMX-LMCH MX-C-ECUBLENS LAUSANNE, CH-1015 SWITZERLAND	Phone: 41-21-693-3966 Fax: 41-21-693-3946 Email: JAMES.KELLY@EPFL.CH Participation: Poster Presenter
<b>KEVIN W KELLY</b> LOUISIANA STATE UNIVERSITY DEPARTMENT OF MECHANICAL ENGINEERING 2502 CEBA BATON ROUGE, LA 708	Phone: 225-388-5928 Fax: Email: KELLY@ME.LSU.EDU Participation: Speaker
<b>KAZUO KONDO</b> UNIVERSITY OF OKAYAMA DEPARTMENT OF APPLIED CHEMISTRY 3-1-1 TUSHIMA-NAKA OKAYAMA, 700-0082 JAPAN	Phone: 81-86-251-8085 Fax: 81-86-251-8085 Email: kkondo@cc.okayama-u.ac.jp Participation: Poster Presenter
<b>GABRIELA LACCONI</b> CORDOBA UNIVERSITY FACULTY CS. QUIM PAB-ARGENTINA, ALA1 CORDOBA, 5000 ARGENTINA	Phone: 54-351-4334169 Fax: 54-351-4334188 Email: GLACCONI@FISQUIM.FCQ.UNC.EDU.AR Participation: Poster Presenter
<b>DAVID LASHMORE</b> MATERIALS INNOVATION 8 COMMERCE AVENUE WEST LEBANON, NH 03784	Phone: 603-298-8421 Fax: 603-298-8425 Email: DAVID.LASHMORE@MIITECHNOLOGIES.COM Participation: Attendee
<b>MARCUS D LAY</b> UNIVERSITY OF GEORGIA CHEMISTRY BUILDING ROOM 246A ATHENS, GA 30604	Phone: 706-542-9453 Fax: 706-542-9454 Email: MLAY@CHEM.UGA.EDU Participation: Attendee
<b>HYO-JONG LEE</b> SEOUL NATIONAL UNIVERSITY SCHOOL OF MATERIAL SCIENCE & ENGINEERING SGUKUN 9 DONG, KWAN-AK KU SEOUL, 151-742 KOREA	Phone: 82-2-880-7100 Fax: 82-2-885-9671 Email: OCMA@SNU.AC.KR Participation: Poster Presenter

JAE-HO LEE  
HONGIK UNIVERSITY  
DEPT OF METAL ENG AND MATERIALS  
72-1 SANGSU-DONG  
MAPO-GU  
SEOUL, 121-791 KOREA

Phone: 82-2-320-1483  
Fax: 82-2-3142-1711  
Email: jhlee@hongik.ac.kr  
Participation: Attendee

SOFIA LEOPOLD  
UPPSALA UNIVERSITY  
ANGSTROM LABORATORY  
BOX 538  
UPPSALA, 751 21 SWEDEN

Phone: 46-17-471-3735  
Fax: 46-18-51-3548  
Email: SOFIA.LEOPOLD@KEMI.UU.SE  
Participation: Poster Presenter

XUAN LIN  
ENTHONE-OMI  
193 MARSH HILL ROAD  
ORANGE, 06511 CT

Phone: 203-799-4931  
Fax: 203-799-4948  
Email: XLIN@ENTHONE.COM  
Participation: Attendee

RUN LIU  
UNIVERSITY OF MISSOURI-ROLLA  
MATERIALS RESEARCH CENTER  
ROLLA, MO 65401

Phone: 573-341-6943  
Fax: 573-341-2071  
Email: RLIU@UMR.EDU  
Participation: Poster Presenter

GUILLERMO MARSHALL  
UNIVERSIDAD DE BUENOS AIRES  
FACULTAD DE CIENCIAS EXACTAS Y NATURALES  
DEPTO. COMPUTA.  
PAB. I, CIUDAD UNIVERSITARIA  
BUENOS AIRES, 1428 ARGENTINA

Phone: 54-11-4576-3359  
Fax: 54-11-4576-3359  
Email: MARSHALG@MAIL.RETINA.AR  
Participation: Poster Presenter

MKHULU K MATHE  
UNIVERSITY OF GEORGIA  
DEPARTMENT OF CHEMISTRY  
1001 CEDAR STREET  
ATHENS, GA 30601

Phone: 706-542-9453  
Fax: 706-542-9454  
Email: KMATHE@SUNCHEM.CHEM.UGA.EDU  
Participation: Poster Presenter

STEVEN T MAYER  
NOVELLUS SYSTEMS  
26277 SW 95TH AVENUE  
WILSONVILLE, OR 97070-8219

Phone: 503-685-5558  
Fax: 503-685-8399  
Email: STEVE.MAYER@NOVELLUS.COM  
Participation: Speaker

STEVEN J MITCHELL  
FLORIDA STATE UNIVERSITY  
400 DIRAC SCIENCE LIBRARY  
TALLAHASSEE, FL 32306

Phone: 850-644-6263  
Fax:  
Email: MITCHELL@CSIT.FSU.EDU  
Participation: Attendee

THOMAS P MOFFAT  
NIST  
BUILDING 224, B166  
GAITHERSBURG, MD 20899-3956

Phone: 301-975-2143  
Fax: 301-926-7679  
Email: TMOFFAT@NIST.GOV  
Participation: Attendee

MASATSUGU MORIMITSU  
KYUSHU INSTITUTE OF TECHNOLOGY  
1-1 SENSUI  
KITAKYUSHU, FUKUOKA 8048550 JAPAN

Phone: 93-8843309  
Fax: 93-8843309  
Email: MORIMIZ@CHE.KYUTECH.AC.JP  
Participation: Poster Presenter

SYLVIE MORIN  
YORK UNIVERSITY  
DEPARTMENT OF CHEMISTRY  
4700 KEELE STREET  
TORONTO, ON M3J 1P3 CANADA

Phone: 416-736-2100 X 22303  
Fax: 416-736-5936  
Email: SMORIN@YORKU.CA  
Participation: Poster Presenter

RONALD J MORRISSEY  
TECHNIC, INC.  
1 SPECTACLE STREET  
CRANSTON, RI 02910-1032

Phone: 401-781-6100  
Fax: 401-781-2890  
Email: RESEARCH@TECHNIC.COM  
Participation: Attendee

GHOLAMREZA G NABIYOUNI  
UNIVERSITY OF BRISTOL  
H.H. WILLS PHYSICS LABORATORY, ROOM G.54  
TYNDALL AVENUE  
BRISTOL, BS8 1TL UNITED KINGDOM

Phone: 44-117-9288951  
Fax: 44-117-9255624  
Email: G.NABIYOUNI@BRIS.AC.UK  
Participation: Poster Presenter

IRIS NANDHAKUMAR  
UNIVERSITY OF SOUTHAMPTON  
DEPARTMENT OF CHEMISTRY  
HIGHFIELD  
SOUTHAMPTON, HAMPSHIRE SO17 1BJ UNITED KINGDOM

Phone: 44-23-80-59-4096  
Fax: 44-23-80-67-6960  
Email: iris@soton.ac.uk  
Participation: Poster Presenter

MADHAVAN NARAYANAN  
WAYNE STATE UNIVERSITY  
DEPARTMENT OF CHEMISTRY  
ROOM 75  
5101 CASS AVENUE  
DETROIT, MI 48202

Phone: 313-577-0482  
Fax:  
Email: MNARAYAN@CHEM.WAYNE.EDU  
Participation: Poster Presenter

CORA O'REILLY  
TRINITY COLLEGE DUBLIN  
PHYSICS DEPARTMENT  
DUBLIN 2, IRELAND

Phone: 353-(0)1-608-2171  
Fax: 353-1-671-1759  
Email: OREILLY2@TCD.IE  
Participation: Poster Presenter

TETSUYA OSAKA  
WASEDA UNIVERSITY  
SCHOOL OF SCIENCE AND ENGINEERING  
OKUBO 3-4-1, SHINJUKU-KU  
TOKYO, 169-8555 JAPAN

Phone: 81-3-52863202  
Fax: 81-3-32052074  
Email: OSAKATET@MN.WASEDA.AC.JP  
Participation: Speaker

DAVID J PENA  
PENN STATE UNIVERSITY  
152 DAVEY LAB  
BOX 61  
UNIVERSITY PARK, PA 16802

Phone: 814-863-8038  
Fax: 814-865-1924  
Email: DJP13@PSU.EDU  
Participation: Poster Presenter

RAMAKRISHNAN RAJAGOPALAN  
UNIVERSITY OF CINCINNATI  
498 RHODES HALL  
MATERIALS SCIENCE AND ENGINEERING  
CINCINNATI, OH 45221

Phone: 513-556-6038  
Fax:  
Email: rajagorn@email.uc.edu  
Participation: Poster Presenter

SUDIPTA ROY  
UNIVERSITY OF NEWCASTLE  
DEPARTMENT OF CHEMICAL & PROCC. ENGIN.  
MERZ COURT  
NEWCASTLE, NE1 7RU UNITED KINGDOM

Phone: 44-191-222-7274  
Fax: 44-191-222-5292  
Email: S.ROY@NCL.AC.UK  
Participation: Speaker

**KHALED M SABER**  
NORTH CAROLINA STATE UNIVERSITY  
MATERIALS SCIENCE ENGINEERING DEPARTMENT  
RALEIGH, NC 27695

Phone: 919-515-3853  
Fax: 919-515-7724  
Email: KMSABER@UNITY.NCSU.EDU  
Participation: Attendee

**MICHAEL J SAILOR**  
UNIVERSITY OF CALIFORNIA, SAN DIEGO  
DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY  
9500 GILMAN DRIVE, DEPT. 0358  
LA JOLLA, CA 92093-0358

Phone: 619-534-8188  
Fax: 619-534-5383  
Email: MSAILOR@UCSD.EDU  
Participation: Discussion Leader

**BENJAMIN R SCHARIFKER**  
UNIVERSIDAD SIMON BOLIVAR  
DEPARTAMENTO DE QUIMICA  
APARTADO 89000  
CARACAS, 1080A VENEZUELA

Phone: 58-29063980  
Fax: 58-29063969  
Email: BENJAMIN@USB.VE  
Participation: Discussion Leader

**WERNER SCHINDLER**  
UNIVERSITY OF KARLSRUHE  
HIGH FREQUENCY & QUANTUM ELECTRONICS LABORATORY  
KAISERSTRASSE 12  
KARLSRUHE, 76131 GERMANY

Phone: 49-721-608-7170  
Fax: 49-721-608-2786  
Email: WERNER.SCHINDLER@ETEC.UNI-KARLSRUHE.DE  
Participation: Speaker

**DANIEL SCHWARTZ**  
UNIVERSITY OF WASHINGTON  
DEPARTMENT OF CHEMICAL ENGINEERING  
BOX 351750  
SEATTLE, WA 98195-1750

Phone: 206-685-4815  
Fax: 206-685-3451  
Email: DTS@U. WASHINGTON.EDU  
Participation: Vice Chair

**WALTHER SCHWARZACHER**  
UNIVERSITY OF BRISTOL  
H H WILLS PHYSICS LAB  
TYNDALL AVENUE  
BRISTOL, BS8 1TL UNITED KINGDOM

Phone: 44-117-9288709  
Fax: 44-117-9255624  
Email: W.SCHWARZACHER@BRISTOL.AC.UK  
Participation: Speaker

**PETER SEARSON**  
THE JOHNS HOPKINS UNIVERSITY  
DEPT OF MATERIALS SCIENCE & ENGINEERING  
BALTIMORE, MD 21218

Phone: 410-516-8774  
Fax: 410-516-5293  
Email: SEARSON@JHU.EDU  
Participation: Discussion Leader

**LAURENT SERVANT**  
LABORATOIRE DE PHYSICO-CHEMIE MOLECULAIRE  
351 COURS DE LA LIBERATION  
TALENCE, 33405 FRANCE

Phone: 33-556-84-64-16  
Fax: 33-556-84-84-02  
Email: LAURENT@MORGANE.LSMC.U-BORDEAUX.FR  
Participation: Poster Presenter

**CURTIS SHANNON**  
AUBURN UNIVERSITY  
DEPARTMENT OF CHEMISTRY  
CB179  
AUBURN, AL 36849-5312

Phone: 334-844-6964  
Fax: 334-844-6959  
Email: SHANNCG@MAIL.AUBURN.EDU  
Participation: Speaker

**MUTSUHIRO SHIMA**  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
77 MASSACHUSETTS AVENUE  
DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING  
13-4038  
CAMBRIDGE, MA 02139-4307

Phone: 617-253-6891  
Fax: 617-252-1020  
Email: SHIMA@MIT.EDU  
Participation: Attendee

**GARY A SHREVE**

3M  
6801 RIVER PLACE BOULEVARD  
A143-5N-01  
AUSTIN, TX 78729

Phone: 512-984-5557  
Fax: 512-984-5285  
Email: GSHREVE@MMM.COM  
Participation: Attendee

**KARL SIERADZKI**

ARIZONA STATE UNIVERSITY  
DEPT. MECHANICAL & AEROSPACE ENGINEERING  
P.O. BOX 876106  
TEMPE, AZ 85287

Phone: 480-965-8990  
Fax: 480-965-1384  
Email: KARL@ICARUS.EAS.ASU.EDU  
Participation: Speaker

**DINESH K SOOD**

ROYAL MELBOURNE INSTITUTE OF TECHNOLOG  
124 LA TROBE STREET  
SCHOOL OF ELECTRICAL AND COMPUTER SYSTEMS ENGINEERING  
MELBOURNE, 3134 AUSTRALIA

Phone: 613-9925-2620  
Fax: 613-9662-1060  
Email: DSOOD@RMIT.EDU.AU  
Participation: Poster Presenter

**THOMAS A SORENSON**

UNIVERSITY OF MISSOURI ROLLA  
MATERIALS RESEARCH CENTER  
ROLLA, MO 65409

Phone: 573-341-6943  
Fax: 573-341-2071  
Email: SORENSON@UMR.EDU  
Participation: Poster Presenter

**MANUEL P SORIAGA**

TEXAS A&M UNIVERSITY  
DEPARTMENT OF CHEMISTRY  
MS 3255  
COLLEGE STATION, TX 77843

Phone: 409-845-1846  
Fax: 409-845-3523  
Email: SORIAGA@MAIL.CHEM.TAMU.EDU  
Participation: Discussion Leader

**NATTAPONG SRISOOK**

UNIVERSITY OF GEORGIA  
109 COLLEGE STATION RD, APT J311  
ATHENS, GA 30605

Phone: 706-613-1135  
Fax:  
Email: nsrisook@sunchem.chem.uga.edu  
Participation: Attendee

**GERY R STAFFORD**

NIST  
ELECTRODEPOSITION GROUP  
BUILDING 224, ROOM B166  
GAITHERSBURG, MD 20899

Phone: 301-975-6412  
Fax: 301-926-7679  
Email: GERY.STAFFORD@NIST.GOV  
Participation: Poster Presenter

**EUGENE STEP**

SHIPLEY  
455 FOREST STREET  
MARLBOROUGH, MA 01752

Phone: 508-229-7369  
Fax: 508-481-1937  
Email: estep@shipley.com  
Participation: Poster Presenter

**JOHN L STICKNEY**

UNIVERSITY OF GEORGIA  
DEPARTMENT OF CHEMISTRY  
ATHENS, GA 30602-2556

Phone: 706-542-1967  
Fax: 706-542-9454  
Email: STICKNEY@SUNCHEM.CHEM.UGA.EDU  
Participation: Chair

**JAY A SWITZER**

UNIVERSITY OF MISSOURI-ROLLA  
DEPARTMENT OF CHEMISTRY  
103 MATERIALS RESEARCH CENTER  
ROLLA, MO 65401-1170

Phone: 573-341-4383  
Fax: 573-341-2071  
Email: JSWITZER@UMR.EDU  
Participation: Speaker

**YONGSUG TAK**  
INHA UNIVERSITY  
DEPARTMENT OF CHEMICAL ENGINEERING  
253 YONGHYUN-DONG, NAM-KU  
INCHON, 402-751 KOREA

Phone: 82-32-8607471  
Fax: 82-32-872-0959  
Email: YSTAK@INHA.AC.KR

Participation: Poster Presenter

**NAO TAKANO**  
WASEDA UNIVERSITY  
OKUBO 3-4-1, SHINJUKU-KU  
TOKYO, 169-8555 JAPAN

Phone: 81-352863202  
Fax: 81-332052074  
Email: NTAANO@MN.WASEDA.AC.JP

Participation: Poster Presenter

**JAN B TALBOT**  
UNIVERSITY OF CALIFORNIA, SAN DIEGO  
DEPT OF AMES/CHEMICAL ENGINEERING  
9500 GILMAN DRIVE  
LA JOLLA, CA 92093-0411

Phone: 619-534-3176  
Fax: 619-534-4543  
Email: JTALBOT@UCSD.EDU

Participation: Attendee

**RAMAN VAIDYANATHAN**  
UNIVERSITY OF GEORGIA  
DEPARTMENT OF CHEMISTRY  
1001 CEDAR STREET  
ATHENS, GA 30605

Phone: 706-542-9453  
Fax:  
Email: RVAIDY@SUNCHEM.CHEM.UGA.EDU

Participation: Poster Presenter

**KRIS VARAZO**  
THE UNIVERSITY OF GEORGIA  
DEPT OF CHEMISTRY  
ATHENS, GA 30602

Phone: 706-542-9453  
Fax: 706-542-9454  
Email: VARAZO@SUNCHEM.CHEM.UGA.EDU

Participation: Poster Presenter

**TRAVIS L WADE**  
UNIVERSITY OF GEORGIA  
DEPARTMENT OF CHEMISTRY  
1001 CEDAR STREET  
ATHENS, GA 30601

Phone: 706-542-9453  
Fax: 706-542-9454  
Email: WADE@SUNCHEM.CHEM.UGA.EDU

Participation: Poster Presenter

**KLAUS WANDELT**  
INST. PHYSIKALISCHE CHEM  
WEGELERSTR 12  
BONN, D53115 GERMANY

Phone: 0049-228-732213  
Fax: 0049-228-732515  
Email: K.WANDELT@UNI-BONN.DE

Participation: Speaker

**WEIJUA WANG**  
UNIVERSITY OF WASHINGTON  
DEPARTMENT OF CHEMICAL ENGINEERING  
BOX 351750  
SEATTLE, WA 98195

Phone: 206-685-8789  
Fax:  
Email: WEIHUA@U.WASHINGTON.EDU

Participation: Poster Presenter

**LINDELL C WARD**  
UNIVERSITY OF GEORGIA  
DEPT. OF CHEMISTRY  
ATHENS, GA 30602

Phone: 706-542-9453  
Fax: 706-542-9454  
Email: LWARD@SUNCHEM.CHEM.UGA.EDU

Participation: Poster Presenter

**ALAN WEST**  
COLUMBIA UNIVERSITY  
DEPARTMENT OF CHEMICAL ENGINEERING  
918 MUDD BUILDING  
NEW YORK, NY 10027

Phone: 212-854-4452  
Fax: 212-854-3054  
Email: ACW17@COLUMBIA.EDU

Participation: Discussion Leader

• KAZIMIERZ WIKIEL  
TECHNIC, INC  
1 SPECTACLE STREET  
CRANSTON, RI 02910

Phone: 401-785-8732  
Fax: 401-781-2890  
Email: kaze@aoi.com

Participation: Attendee

BILL WU  
MILLIPORE CORP  
80 ASHBY ROAD  
BEDFORD, MA 01730

Phone: 781-533-2730  
Fax: 781-533-3195  
Email: Bill\_wu@millipore.com

Participation: Attendee

YUNG-HERNG YAU  
BETHLEHEM STEEL CO.  
HOMER RESEARCH LABORATORIES  
BETHLEHEM, PA 18016

Phone: 610-694-1431  
Fax: 610-694-1739  
Email: YHYAU@BSCO.COM

Participation: Attendee

MICHAEL P ZACH  
UC, IRVINE  
CHEMISTRY DEPARTMENT  
516 ROWLAND HALL  
IRVINE, CA 92697

Phone: 949-324-2612  
Fax:  
Email: MZACH@UCI.EDU

Participation: Poster Presenter

GIOVANNI ZANGARI  
UNIVERSITY OF ALABAMA  
MTE DEPT.  
P.O. BOX 870202  
TUSCALOOSA, AL 35487

Phone: 205-348-7074  
Fax: 205-348-2164  
Email: GZANGARI@COE.ENG.UA.EDU

Participation: Attendee

YUN ZHANG  
LUCENT TECHNOLOGIES EC&S  
236 RICHMOND VALLEY ROAD  
STATEN ISLAND, NY 10309-2620

Phone: 718-317-4419  
Fax: 718-317-4439  
Email: YZHANG@LUCENT.COM

Participation: Attendee

QUN ZHU  
UNIVERSITY OF MISSISSIPPI  
P.O. BOX 4411  
UNIVERSITY, MS 38677

Phone: 662-915-7605  
Fax: 662-915-7300  
Email: QZHU@OLEMISS.EDU

Participation: Poster Presenter